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Two New Species of *Helminthoglypta* (Gastropoda: Pulmonata) from Southern California, with Comments on the Subgenus *Charodotes* Pilsbry

by

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Abstract. Two new species of helminthoglyptid land snails, formerly regarded as outlying populations of *Helminthoglypta traskii* (Newcomb), are described: *Helminthoglypta* (*Charodotes*) ***uvasana*** from along Grapevine Creek, near Fort Tejon, San Emigdio Mountains, Kern County, and *H.* (*C.*) ***vasquezi*** from Vasquez Rocks and Agua Dulce Canyon, Los Angeles County, California. Early records of *H. traskii* from Fort Tejon refer to *H. **uvasana***. *Helminthoglypta tejonis* Berry, recently considered a subspecies of *H. traskii,* is restored to species rank. The subgenus *Charodotes* Pilsbry is redefined and removed from the synonymy of *Helminthoglypta, sensu stricto.* A preliminary list of taxa included in *Charodotes* is presented.

INTRODUCTION

In recent years it has become apparent that the land snail species *Helminthoglypta traskii* (Newcomb, 1861) as construed by virtually all authors (*e.g.,* BARTSCH, 1916; PILSBRY, 1939; ROTH, 1973) is a composite taxon. Several of the taxa that PILSBRY (1939), the last reviser of the genus, regarded as subspecies or populations of *H. traskii* are as distinct anatomically and conchologically as other, recognized, valid species of *Helminthoglypta.*

Helminthoglypta traskii is the type species of the subgenus *Charodotes* Pilsbry, 1939. MILLER (1981, 1985) showed that *Charodotes* was founded on a misconception about the reproductive system of *H. traskii.* PILSBRY (1939) originally had reported that in *Charodotes* the wall of the upper chamber of the penis was single, rather than double as in all other species of *Helminthoglypta.* However, in *H. traskii* and all other species that have been dissected, a double wall is present. As a consequence, *Charodotes* is currently regarded as a synonym of *Helminthoglypta, sensu stricto* (*e.g.,* ROTH, 1987).

In this paper we redefine the available name *Charodotes* on the basis of shell and genital characters, remove it from the synonymy of *Helminthoglypta, sensu stricto,* and apply it to the clade consisting of the taxa formerly included in *H. traskii,* along with other related species.

Land snails identified as *Helminthoglypta traskii* have been reported from the vicinity of Fort Tejon, Kern County, California, since the early days of biological and geological reconnaissance in the West (NEWCOMB, 1865; COOPER, 1869; BARTSCH, 1916; HANNA, 1927; PILSBRY, 1939). HANNA (1927) examined specimens collected by E. C. Van Dyke in 1927 "on the margin of a wet meadow about a quarter of a mile south of old Fort Tejon" but could find no difference between them and *H. traskii* from the Los Angeles area, except for slightly smaller size. PILSBRY (1939:172–174, fig. 85f) illustrated a specimen collected by the geologist W. M. Gabb at Fort Tejon, and commented that the sculpture was typical for the species.

Fort Tejon is about 3 km southeast of the type locality of *Helminthoglypta tejonis* Berry, 1938 ("two miles above Grapevine Station, old State Highway, Tejon Pass, Kern County"). PILSBRY (1939) regarded *H. tejonis* as a subspecies of *H. traskii.* The circumstance of apparently typical *H. traskii* being found within a few kilometers of the large, distinctive *H. "traskii" tejonis* went unremarked by all later authors.

In March 1987 we collected *Helminthoglypta* along Grapevine Creek immediately north of the north boundary of Fort Tejon State Historical Park, including living adult material for dissection. Comparisons with *H. traskii traskii* and *H. tejonis* (which we will argue herein should be

Table 1

Characters of the subgenera of *Helminthoglypta*.

Character	Subgenus			
	Helminthoglypta, sensu stricto	*Charodotes*	*Rothelix*	*Coyote*
Shell sculpture	various combinations of malleations, spiral striae, and collabral rugae more or less beaded by oblique, divaricating sulci	incised spiral striae, collabral rugae, and papillation of variable strength and distribution	wrinkle-like collabral rugae and dense overall papillation; spiral sculpture generally faint	varying degrees of papillation; spiral striation present in some species
Vagina	opening into atrium near insertion of atrial sac	opening into atrium near insertion of atrial sac	opening into atrial sac near posterior end	opening into atrium near insertion of atrial sac
Lower chamber of penis	short, with small papilla or verge at summit in some species	short, with conic or cylindrical verge at summit in some species	large, sausage-shaped, with post-medial constriction; verge absent	short, more or less cylindrical, with short, broad papilla at summit
Upper chamber of penis	long, slender, club-shaped, cylindrical, or inflated	long, slender, more or less cylindrical; sometimes with swollen anterior portion	short, slender, cylindrical or narrower at anterior end	moderately long, more or less conical, expanding to prominent swelling at lower end

restored to species rank) show that the Grapevine Creek taxon is a new species and it is described below as *Helminthoglypta* ***uvasana,*** sp. nov.

Another outlying charodotean *Helminthoglypta* occurs at Vasquez Rocks and in Agua Dulce Canyon, northern Los Angeles County. PILSBRY (1939:fig. 85e) illustrated a specimen from Vasquez Rocks. GREGG (1948:3) referred to it as "a desert modification of *H. traski* [*sic*]" and considered it subspecifically distinct. Wendell O. Gregg and Walter B. Miller collected it alive at both localities during the 1950s and 1960s. We secured additional living material at Vasquez Rocks in 1988. The species is described below as *Helminthoglypta* ***vasquezi,*** sp. nov.

The following abbreviations are used: ANSP, Academy of Natural Sciences of Philadelphia; BR, senior author's collection, San Francisco, California; CAS, California Academy of Sciences; LACM, Natural History Museum of Los Angeles County; SBMNH, Santa Barbara Museum of Natural History; UCMP, University of California (Berkeley) Museum of Paleontology; USNM, U.S. National Museum of Natural History.

SYSTEMATICS

Family HELMINTHOGLYPTIDAE Pilsbry, 1939

Helminthoglypta Ancey, 1887

Type species: *Helix tudiculata* A. Binney, 1843, by original designation.

(*Charodotes*) Pilsbry, 1939

Type species: *Helix traskii* Newcomb, 1861, by original designation.

Diagnosis: Shell umbilicate, subglobose to depressed, sculptured with incised spiral striae, more or less prominent collabral rugae, and papillation of variable strength and distribution; upper chamber of penis long (double-walled as usual in the genus), slender, more or less cylindrical, with swollen anterior portion in some species; lower chamber of penis simple-walled, short, sometimes with conic or cylindrical verge at summit; vagina opening into atrium near insertion of atrial sac.

Remarks: Table 1 summarizes the diagnostic morphological characteristics of the subgenera of *Helminthoglypta.*

Malleated sculpture, characteristic of the "*Helminthoglypta tudiculata* series" and "*Helminthoglypta nickliniana* series" (PILSBRY, 1939) (groups within the subgenus *Helminthoglypta, sensu stricto*), is absent, or at most weak and localized, in species of *Charodotes.* A clothlike pattern formed by strong collabral rugae cut into beads or granules by oblique, divaricating sulci, found in many species of the *H. nickliniana* series, is unknown in *Charodotes.*

The subgenus *Rothelix* Miller, 1985, has a relatively short and narrow upper penial chamber, a large sausage-shaped lower chamber with a post-medial constriction, and a vagina that opens into the atrial sac near its posterior end. In the subgenus *Coyote* Reeder & Roth, 1988, the upper chamber of the penis is more or less conical, tapering

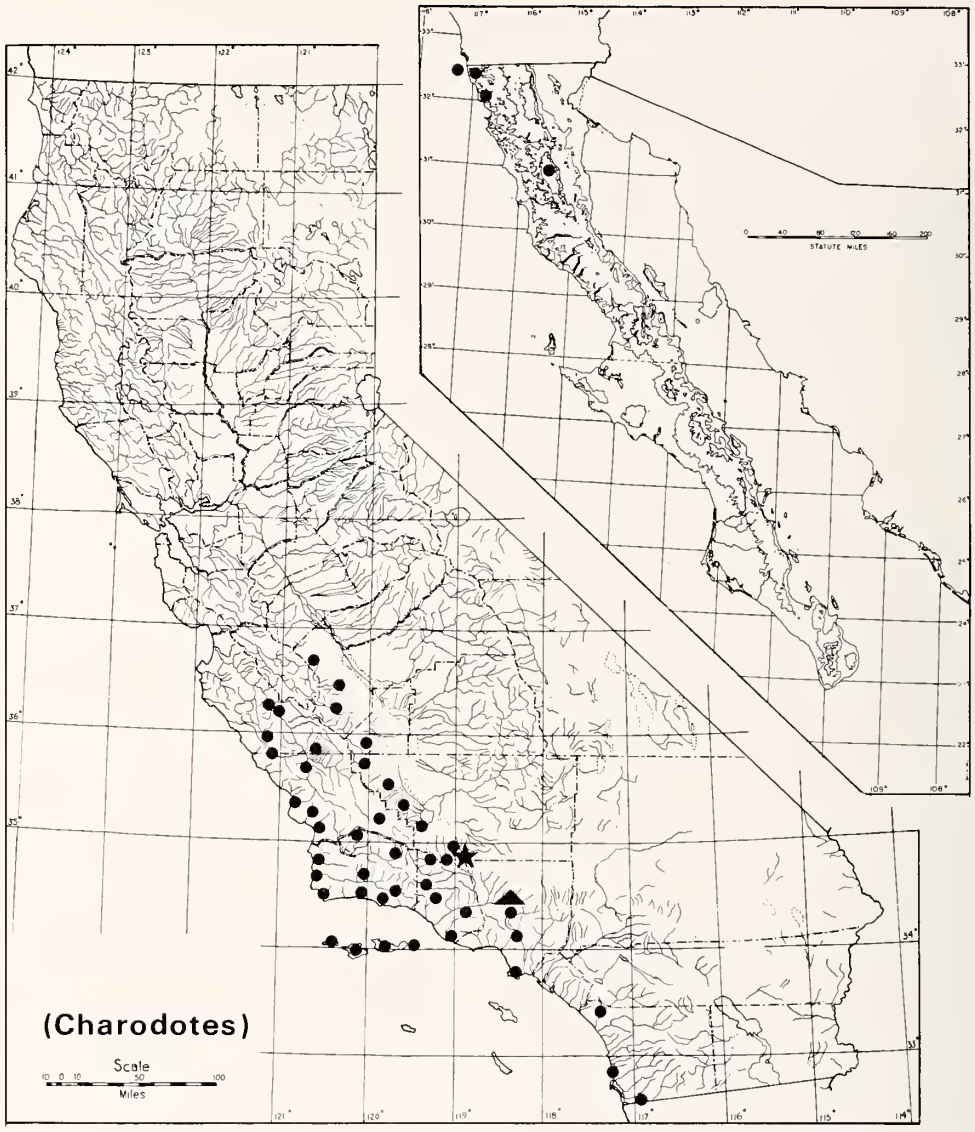

Figure 1

Map of California and (inset) Baja California showing distribution of the subgenus *Charodotes* and type localities of the two new species. Star = type locality of *Helminthoglypta* ***uvasana***. Triangle = type locality of *Helminthoglypta* ***vasquezi***.

from a slender summit to a prominent swelling at the lower end. The swelling is caused by a pronounced thickening of the walls of the inner tube, usually accompanied by enlarged glandular pilasters along the widening lumen. The swelling projects into the lower chamber of the penis in the form of a short, broad papilla. The swollen anterior portion of the upper chamber that occasionally occurs in *Charodotes* (*e.g.,* in *Helminthoglypta sanctaecrucis*) consists of a sudden widening, involving both inner and outer walls, and is not homologous with the swelling in *Coyote*.

Pilsbry (1939:68, 170) originally distinguished *Charodotes* from *Helminthoglypta, sensu stricto,* mainly on the basis of a purported single, thick wall of the upper chamber of the penis. However, *H. traskii,* like all other species of *Helminthoglypta,* actually has a double-walled upper chamber (Miller, 1981, 1985). Pilsbry (1939) also mentioned a common duct of the mucus glands as long as the dart sac or shorter, but as Miller (1985) noted, this character is variable within populations. *Charodotes* is here redefined primarily on the basis of its striate and papillose shell sculpture and relatively simple, basically cylindrical, upper penial structure.

The following species and subspecies (listed in the order in which they were proposed) are assigned to *Charodotes*:

Explanation of Figures 2 to 4

Figures 2–4. *Helminthoglypta* (*Charodotes*) ***uvasana***, sp. nov., shell; holotype SBMNH 35566, top, apertural, and basal views. Diameter 19.8 mm.

Helminthoglypta traskii (Newcomb, 1861)
H. t. traskii
H. t. coronadoensis (Bartsch, 1916)
H. t. isidroensis (Bartsch, 1918)
H. t. pacoimensis Gregg, 1931
H. ayresiana (Newcomb, 1861)
H. carpenteri (Newcomb, 1861)
H. walkeriana (Hemphill, 1911)
H. coelata (Bartsch, 1916)
H. phlyctaena (Bartsch, 1916)
H. willetti (Berry, 1920)
H. sanctaecrucis Pilsbry, 1927
H. fieldi Pilsbry, 1930
H. reediana Willett, 1932
H. misiona Chace, 1937
H. tejonis Berry, 1938
H. reederi Miller, 1981
H. salviae Roth, 1987
H. s. salviae
H. s. mina Roth, 1987
H. ***uvasana***, sp. nov.
H. ***vasquezi***, sp. nov.

Figure 1 depicts the distribution of *Charodotes*, based on these taxa. The following species, which Pilsbry (1939) included in *Charodotes*, may also prove to belong to the subgenus: *Helminthoglypta proles* (Hemphill *in* W. G. Binney, 1892); *H. ferrissi* Pilsbry, 1924; *H. euomphalodes* Berry, 1938; *H. inglesi* Berry, 1938; *H. liodoma* Berry, 1938; *H. stageri* Willett, 1938. *Helminthoglypta hannai* Pilsbry, 1927, from Isla Guadalupe, Baja California, Mexico, may also belong to *Charodotes*. *Helminthoglypta petricola* (Berry, 1916) and its subspecies, included by Pilsbry (1939) in *Charodotes*, belong to the subgenus *Coyote* (Reeder & Roth, 1988).

In the species here assigned to *Charodotes*, incised spiral sculpture is more prominent than papillation. In *Helminthoglypta avus* (Bartsch, 1916), *Helminthoglypta callistoderma* (Pilsbry, 1917), and *Helminthoglypta orina* Berry, 1938, the penis is cylindrical with a globose swelling at the lower end of the upper chamber, and papillation is more prominent than incised spiral striae. Pending additional study, we exclude this group of species from *Charodotes*.

Helminthoglypta, sensu stricto, as recognized here, is a rather heterogeneous group, which may be subdivided as a result of additional studies now in progress.

Helminthoglypta (*Charodotes*) ***uvasana***
Roth & Hochberg, sp. nov.

(Figures 2–5)

Epiphragmophora traskii traskii (Newcomb): Bartsch, 1916: 613 (in part).
Helminthoglypta traskii (Newcomb): Hanna, 1927:32–34.
Helminthoglypta traski [*sic*] (Newcomb): Pilsbry, 1939:172–174 (in part), fig. 85f.
Non *Helix traskii* Newcomb, 1861:91.

Diagnosis: A medium-sized *Helminthoglypta* with solid, compact, depressed-helicoid, umbilicate shell sculptured with fine spiral striae; granulation present below suture of early whorls, in umbilicus and behind lip; body whorl tightly coiled, scarcely descending.

Description—shell of holotype: Shell (Figures 2–4) of medium size for genus, solid, compact, moderately glossy, depressed-helicoid, umbilicate; umbilicus contained 8.25 times in major diameter. Spire low-conic; whorl profile moderately convex; suture distinctly impressed. Embryonic whorls 1.7, narrower than immediately following teleoconch whorl; nuclear tip smooth, thereafter granulose with low, coarse, irregular collabral rugae and scattered papillae; zone below suture densely granulose. Early teleoconch whorls with low, convex-forward, collabral rugae; minor granulation below suture; sparse and inconspicuous papillation; and, from third whorl on, fine, incised spiral striae. Striae weak and discontinuous at first, becoming stronger and continuous on later whorls. Striae prominent on body whorl, continuing over base into umbilicus. Base moderately inflated, tumid around umbilicus, granulose within

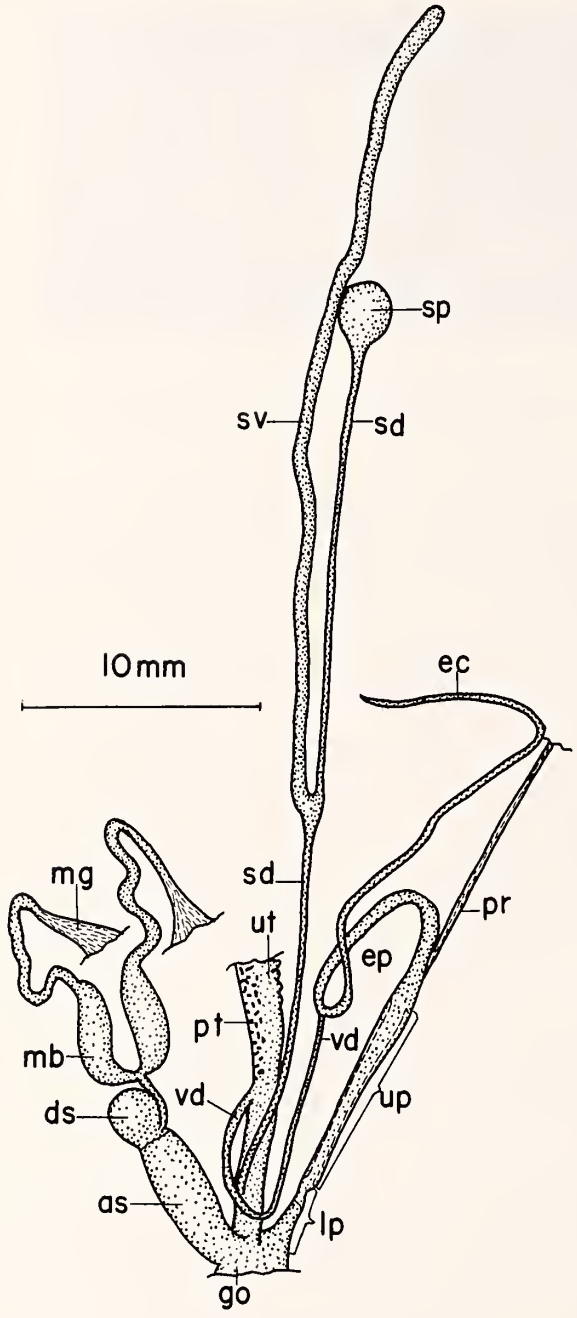

Figure 5.

Helminthoglypta (*Charodotes*) ***uvasana***, sp. nov., reproductive system, drawn from projection of stained whole mount; ovotestis and albumen gland region omitted; paratype SBMNH 35567. Abbreviations: as, atrial sac; ds, dart sac; ec, epiphallic caecum; ep, epiphallus; go, genital orifice; lp, lower chamber of penis; mb, mucus gland bulbs; mg, part of mucus gland membranes; pr, penial retractor muscle; pt, lower part of prostate; sd, spermathecal duct; sp, spermatheca; sv, spermathecal diverticulum; up, upper chamber of penis; ut, part of uterus; vd, vas deferens.

umbilicus and behind lip. Body whorl tightly coiled, scarcely descending except just before aperture, not constricted behind lip. Aperture auricular, moderately oblique; plane of peristome at angle of 35° to vertical; lip turned outward, narrowly expanded, scarcely reflected except at columellar insertion. Upper limb of peristome produced and slightly downturned. Inner lip weakly encroaching on umbilicus. Parietal callus thin, granulose, with sculpture of parietal wall showing through. Shell pinkish tan under a yellowish brown periostracum; with a 1.0-mm-wide russet spiral band on shoulder (prolonging trajectory of suture) with pale zones of equal width (lower zone more conspicuous) on either side of band. Diameter (exclusive of expanded lip) 19.8 mm, height 11.5 mm, width of umbilicus 2.4 mm, whorls 5.7.

Measurements and counts of material at hand (n = 38): Range of adult shell diameter 17.4–23.5 mm. Number of whorls 5.3–6.4; number of embryonic whorls 1.7–2.0. Umbilicus contained 7.5–9.0 times in shell diameter.

Soft anatomy: Mantle over lung clear buff, about 30% covered with irregular black spots. Reproductive system (Figure 5) typical of *Charodotes*. Atrium short and broad. Atrial sac cylindrical, about twice as long as vagina, with spherical dart sac at upper end, lacking a glandular collar. Mucus gland bulbs of moderate size, joined by slender, Y-shaped common duct. Duct of spermatheca slender throughout its length, bearing diverticulum of greater diameter, about 1.5 times as long as spermathecal duct above its origin. Penis with short, conical lower chamber (approximately as long as vagina) and long, double-walled upper chamber, cylindrical or slightly wider at summit, leading to epiphallus of same diameter. Verge absent. Epiphallic caecum about as long as penis plus epiphallus.

Type material: Holotype: Santa Barbara Museum of Natural History, SBMNH 35566 (shell, whole mount of mantle tissue, and stained whole mount of reproductive system), CALIFORNIA: Kern County: along Grapevine Creek in Castaic Valley, immediately north of boundary of Fort Tejon State Historical Park (projected SE¼ sec. 9 to NE¼ sec. 16, T. 9 N, R. 19 W, San Bernardino Base and Meridian), elevation approximately 940 m (3100 ft); under downed log of *Quercus lobata*. W. B. Miller, F. G. Hochberg, B. Roth coll., 9 March 1987.

Paratypes: SBMNH 35567 (10 shells and stained whole mount of reproductive system), from same locality as holotype, under downed oak logs in leaf litter, in brush, and in wood rat nests. Additional paratypes deposited in ANSP, CAS, BR, LACM, and USNM.

Referred material: CALIFORNIA: Kern County: Fort Tejon (ANSP 10697, BR 448, CAS 036312, CAS 051338, UCMP 2497, USNM 58523); near Old Fort Tejon (BR 774, BR 1539, CAS 036330); "Tejon" [*sic*] (ANSP 10698, W. M. Gabb coll., one specimen figured by PILSBRY, 1939: fig. 85f); Grapevine Creek at Fort Tejon (SBMNH 35568);

Explanation of Figures 6 to 8

Figures 6–8. *Helminthoglypta tejonis* Berry, shell; holotype SBMNH 34216, top, apertural, and basal views. Diameter 30.3 mm.

Grapevine Canyon, 0.25 mi [0.4 km] S of Old Fort Tejon (CAS 036290); 0.5 mi [0.8 km] N of Tejon Inn (LACM 114626). Los Angeles County: Oak Flat Ranger Station, 12 mi [19 km] N of Castaic (CAS 036300).

Remarks: *Helminthoglypta* ***uvasana*** somewhat resembles presumed topotypic *Helminthoglypta traskii traskii* from Point Fermin, Los Angeles County. The shells of both species are robust and run through about the same range of size and shape, but the incised spiral sculpture of *H.* ***uvasana*** is finer (7 striae/mm on the last ¼ of the body whorl, compared to 4–5 striae/mm at the same location on *H. traskii*). In *H. traskii* the spermathecal diverticulum is 1.5–2 times as long as the spermathecal duct above its origin. The lower chamber of the penis is longer than that of *H.* ***uvasana***.

Helminthoglypta ***uvasana*** differs from *H. carpenteri* of the southwestern San Joaquin Valley in having a black-spotted mantle when adult. In *H. carpenteri* the mantle over the lung is uniform brownish gray with a black transverse line behind the mantle collar; small juveniles sometimes have black spots. The base of the spermathecal duct of *H. carpenteri* is cavernous; the spermathecal diverticulum is only slightly longer than the spermathecal duct above its origin. The collabral rugae on the shell of *H. carpenteri* are more or less granulose.

Helminthoglypta tejonis occurs approximately 3 km to the northwest (the type locality probably is in the projected SE¼ of sec. 32, T. 10 N, R. 19 W), and about 21 km west of that, along San Emigdio Creek. The shell of *H. tejonis* (Figures 6–8) is larger (26.0–31.2 mm in diameter), thin, broadly depressed-helicoid, with 6.25–7.25 whorls. The spire is broadly conic to low-domed, the suture impressed, the whorls shouldered and somewhat flattened. The periphery is broadly rounded, sloping toward the base. Incised spiral striae first appear on the fourth whorl. Papillation is faint to obsolete, confined to the early neanic whorls, and sometimes replaced by minute pits on later whorls. The umbilicus is contained 9–10 times in the shell diameter, about ¼ covered by the inner lip. The base of the embryonic whorls is visible in the umbilicus, centered within a regular spiral; in *H.* ***uvasana*** the pit of the um-

Explanation of Figures 9 to 11

Figures 9–11. *Helminthoglypta* ***vasquezi***, sp. nov., shell; holotype SBMNH 35569, top, apertural, and basal views. Diameter 16.4 mm.

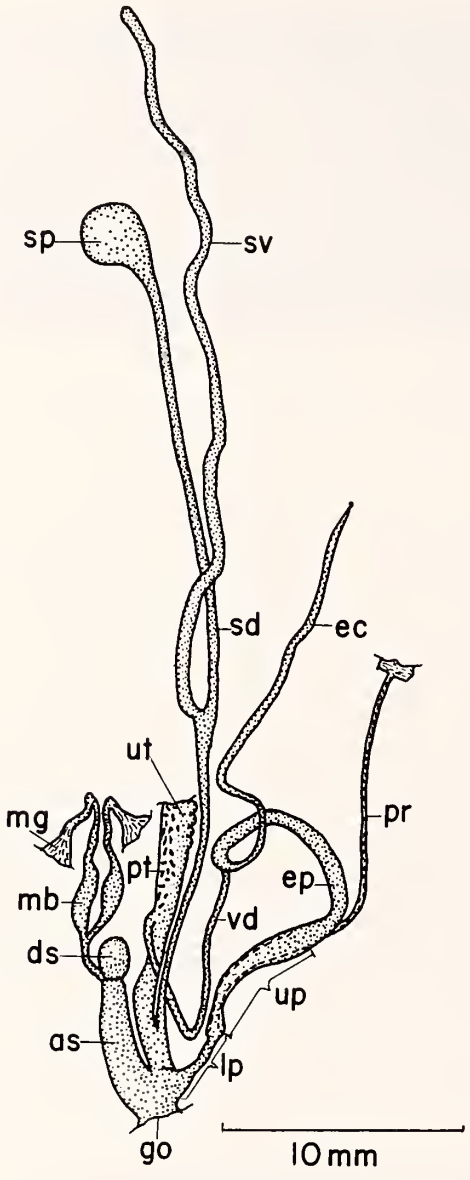

Figure 12

Helminthoglypta ***vasquezi***, sp. nov., reproductive system, drawn from projection of stained whole mount; paratype SBMNH 35570. Abbreviations as in Figure 5.

bilicus is oblique and the embryonic whorls are not readily visible. The spermathecal diverticulum in *H. tejonis* is about as long as the spermathecal duct above its origin. The lower chamber of the penis is rather broadly cylindrical and approximately twice as long as the vagina; its upper half is nearly filled by a thick, cylindrical verge.

Helminthoglypta tejonis has (in common with *H. phlyctaena* and *H. willetti*) a glossy, tumid, broadly depressed-helicoid shell generally more than 25 mm in diameter; the spiral striae are mostly shallow, and papillation is confined to the early neanic whorls. In *H. traskii* the shell is matte to moderately glossy and rarely exceeds 24 mm in diameter. The spiral striae are coarse and strongly impressed. In subspecies *H. traskii pacoimensis* and *H. traskii isidroensis*, papillation extends onto the body whorl; in *H. t. traskii*, papillation fades out by the third or fourth whorl. The spermathecal diverticulum in *H. traskii* is 1.5–2 times as long as the spermathecal duct above its origin. The lower chamber of the penis is cylindrical, relatively long (up to twice as long as the vagina), and sometimes slightly flaring at the base. A verge is absent.

The shell and reproductive system distinctions cited above (especially the presence of a verge in *Helminthoglypta tejonis* and not in *H. traskii*) lead us to restore *H. tejonis* to species rank, as originally proposed for it by BERRY (1938).

The natural vegetation of the San Emigdio Mountains in the vicinity of Fort Tejon is valley oak (*Quercus lobata*) savanna, grading locally to chaparral (KÜCHLER, 1977). Along Grapevine Creek we found the new species under logs and leaf litter among *Quercus lobata*, nettle (*Urtica holoserica*), and poison-oak (*Rhus diversiloba*).

Etymology: Latin, ***uvasana***, pertaining to Canada de las Uvas, a former name for Grapevine Creek (*cf.* BREWER, 1930). The name "grapevine shoulderband" is proposed for purposes of the American Fisheries Society list of the common names of mollusks (see TURGEON et al., 1988) and other administrative uses.

Helminthoglypta (*Charodotes*) ***vasquezi***,
Roth & Hochberg, sp. nov.

(Figures 9–12)

Helminthoglypta traski [*sic*] (Newcomb): PILSBRY, 1939:172–174 (in part), fig. 85e.
Non *Helix traskii* NEWCOMB, 1861:91.

Diagnosis: A small *Helminthoglypta* with thin, delicate, depressed, narrowly umbilicate shell, with fine spiral striae first appearing on last ⅛ of penult; body whorl flaring behind lip, scarcely descending.

Description—shell of holotype: Shell (Figures 9–11) small for genus, thin and delicate, moderately glossy, depressed, umbilicate; umbilicus contained 10.0 times in major diameter. Spire scarcely elevated, low-domed; whorl profile moderately flattened; suture impressed. Embryonic whorls 1.6; nuclear tip smooth, thereafter granulose with low, coarse, irregular collabral rugae and scattered papillae. Early teleoconch whorls with fine, overall, radial wrinkling and crude, convex-forward, collabral rugae, strongest below suture. From third whorl on, minute, more or less diagonally arranged papillation superimposed, fading out on body whorl except for few scattered papillae. Fine, incised spiral striation first appearing on last ⅛ of penult, more prominent on body whorl, continuing over base into umbilicus. Base rather deep, tumid around umbilicus, granulose within umbilicus and behind lip. Body whorl

expanding rapidly, flared behind lip, scarcely descending except just before aperture, not constricted behind lip. Aperture ovate, moderately oblique; plane of peristome shallowly sinuous in profile, at angle of 45° to vertical; lip thickened but not markedly turned outward, reflected only below columellar insertion. Upper limb of peristome produced and slightly downturned. Inner lip weakly encroaching on umbilicus. Parietal callus very thin, granulose, with sculpture of parietal wall showing through. Shell translucent, pale pinkish tan under a yellowish olive periostracum; with a 0.5-mm-wide russet spiral band on shoulder (prolonging trajectory of suture), indistinctly bordered by pale zones (upper zone 0.5 mm wide, lower zone 1.0 mm wide). Diameter (exclusive of expanded lip) 16.4 mm, height 9.4 mm, width of umbilicus 1.6 mm, whorls 5.4.

Measurements and counts of material at hand (n = 66): Range of adult shell diameter 14.6–19.0 mm. Number of whorls 4.5–5.4; number of embryonic whorls 1.4–1.9. Umbilicus contained 7.5–10.0 times in shell diameter.

Soft anatomy: Mantle over the lung clear buff with black maculation. Reproductive system (Figure 12) typical of *Charodotes*. Atrium short and broad. Atrial sac cylindrical-conic, approximately twice as long as vagina, with a spherical dart sac at upper end, lacking a glandular collar. Mucus gland bulbs rather small, joined by Y-shaped common duct. Duct of the spermatheca slender throughout its length, bearing a diverticulum of greater diameter, about 1.25 times as long as spermathecal duct above its origin. Lower chamber of penis short (slightly longer than vagina), narrowly cylindrical, and flaring at base. Double-walled upper chamber moderately long, widening slightly toward summit, leading to epiphallus of same diameter. Verge absent. Epiphallic caecum about as long as penis plus epiphallus.

Type material: Holotype: Santa Barbara Museum of Natural History, SBMNH 35569 (shell, whole mount of mantle tissue, and stained whole mount of reproductive system), CALIFORNIA: Los Angeles County: Vasquez Rocks County Park, in small, north-facing amphitheater south of road, west of most prominent outcrops (NE¼ SW¼ sec. 26, T. 5 N, R. 14 W, San Bernardino Base and Meridian); under clump of *Yucca whipplei*. W. B. Miller, J. D. Goodman, F. G. Hochberg, B. Roth coll., 12 February 1988.

Paratypes: SBMNH 35570 (12 shells and stained whole mount of reproductive system), from same locality as holotype. Additional paratypes deposited in ANSP, BR, CAS, LACM, and USNM.

Referred material: CALIFORNIA: Los Angeles County: Vasquez Rocks (BR 781, CAS 036791, CAS 036792, CAS 036795, LACM 65520, LACM 114608, SBMNH 35571, SBMNH 35572, SBMNH 35573, SBMNH 35574); Vasquez Rocks, off Mint Canyon highway, west end about 3 mi [4.8 km] south of highway under roots of yucca (ANSP 157180, one specimen figured by PILSBRY, 1939:fig. 85e); ridge on N side of Escondido Canyon, Vasquez Rocks County Park, in *Yucca whipplei* clumps (BR 1611); Agua Dulce Canyon 1.5–2.1 mi [2.4–3.4 km] from junction with Soledad Canyon (SBMNH 35575, SBMNH 35576, SBMNH 35577, SBMNH 35578, SBMNH 35579, SBMNH 35580, SBMNH 35581, SBMNH 35582).

Remarks: *Helminthoglypta* ***vasquezi*** differs from *H. traskii* and *H.* ***uvasana*** in that the shell is thin and delicate with fine spiral striation that does not appear until the last part of the penultimate whorl. The striation in *H. traskii* is coarser and present by the third whorl. The umbilicus of *H. traskii* is contained 10–12 times in the shell diameter. The spermathecal diverticulum in *H. traskii* is 1.5–2 times as long as the spermathecal duct above its origin.

Helminthoglypta ***vasquezi*** resembles *H. salviae* from the vicinity of Frazier Park, Kern County, and Quatal and Apache canyons, Ventura County, in having a depressed shell with spire scarcely elevated and a pit-like umbilicus less than one-third covered by the inner lip. The shell of *H. salviae* is thin but not especially delicate; the collabral rugae are smooth or partly broken up into rows of granules; and the body whorl is tightly coiled throughout, rather than rapidly expanding and flaring behind the aperture as in *H.* ***vasquezi***.

The natural vegetation at the type locality is semi-desert chaparral, including *Adenostoma fasciculatum, Juniperus californica,* and extensive patches of *Yucca whipplei*.

Etymology: The species is named for the outlaw and folk hero Tiburcio Vasquez (born 1835, hanged 1875), who plied his trade in the Vasquez Rocks area during the 1870s. The name "Vasquez shoulderband" is proposed for purposes of the American Fisheries Society list of the common names of mollusks (see TURGEON *et al.*, 1988) and other administrative uses.

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